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ORIGINAL COMMUNICATIONS.

ON THE PRACTICAL IDENTITY OF TRUE CROUP AND DIPHTHERIA.

Read before the Philadelphia County Medical Society, Feb. 11, 1874.

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HAYS'S *Journal* for January, 1870, contains a valuable and suggestive article with the following title: "Case of Diphtheritic Croup in which Tracheotomy was performed; Death on the Seventh Day from the Systemic Poison. By John H. Packard, M.D., of Philadelphia." At the close of the paper Dr. Packard says, "As to the cause of death. It is a very common opinion that the existence of false membrane in the bronchi or trachea is a strong contra-indication to operating, and that its absence is in favor of success. Yet in the case now detailed there was no such deposit found anywhere in the air-passages after death, although some casts were coughed up within the first three days. The child died from blood-poisoning; all that could be gained by the operation was gained."

"THE CHILD DIED FROM BLOOD-POISONING," or—as the doctor puts it boldly and distinctly in his title, thus distinguishing it from that blood-deterioration which results from deficient aeration—"FROM THE SYSTEMIC POISON."

My own belief is that in many, perhaps the majority of fatal cases of croup, the cause of death is the systemic poison, and that in all cases of croup our main chance of success consists in counteracting the systemic poison. It is in this belief that I offer the following remarks. At the time that I entered upon the practice of my profession in the city of New York, the medical mind was greatly agitated upon the subject of diphtheria, which had burst forth as an epidemic in several centres at the North and East, but nowhere so destructively as at Albany. A new disease to most of those who were thus suddenly called upon to confront it, they were naturally at a loss to know on what ground to meet it. Unfortunately, it was usually looked upon as a sthenic inflammation, and vigorously combated with antiphlogistics. That seductive little termination, *itis*, which so charmingly simplifies our pathological theories, supplying a bran-new, ready-made nosological nomenclature, with the very trifling expenditure of thought required in appending the same to the Greek (or, as was and is often ignorantly done, to the Latin) name of the organ or tissue which appeared to be most prominently affected in any given case or class of cases, was now most shamelessly married to one of its own family,—tacked on to the end of a morbid process,—and the resultant monster was diphtheritis, or an inflammation of a false membrane. The philological blunder we may pass over with a smile, but the pathological blunder which it expressed and the therapeutic blunder which it induced we can only look back upon with horror. The fatal char-

acter of those early epidemics is only too well remembered. But gradually light dawned. Some practitioners, empirically, simply seeking to avoid those remedies which at least produced no beneficial result,—others, on theoretical and rational grounds, tracing in the symptoms the general outline of a systemic blood-disease,—began timidly to pursue a supporting plan, and to seek for an antidote to the suspected poison. This was found in the salts of chlorine; and diphtheria speedily became the more manageable disease it is to-day. The analogy between the exudation of croup and that of diphtheria early attracted attention; but a still further analogy impressed me even more deeply,—that exhibited in the unhappily similar results of the same line of treatment,—viz., the depletion and depressant, the grandly-named anti-phlogistic plan applied to the two afflictions. The mortality in both under similar arrangement was almost identical, and in this I recognized an argument for the identity of the morbid processes, and determined, when occasion presented, to test the matter by exhibiting in croup the class of remedies which had changed the whole complexion of diphtheria. The opportunity was some time in offering itself. In the course of perhaps a couple of years, having in the mean time had occasional cases of the latter disease to treat, I was summoned by telegraph to New Rochelle to see a child suffering under the former. Before leaving the city I fortified myself with a large phial of solution of chlorate of potassium, and a number of sulphate of quinine powders. The physician in charge was an elderly gentleman, of great intelligence, but who had for a considerable period retired from the active practice of his profession. The case was in the second stage, and, although not of the most intense grade, had progressed steadily, and as yet shown no signs of amelioration. The treatment had been thoroughly routine,—emesis by ipecacuanha, antiphlogosis by tartrate of antimony and potash, and defibrillation by calomel. I concurred in its propriety, but suggested that it had already accomplished all that it could do, and that the time had perhaps arrived for substituting a supporting course. This was readily acquiesced in. I had the satisfaction of learning the next day that the symptoms already showed some improvement. The child recovered, happily. I would like in this connection to call attention to the formula which I employed for the preparation of the chlorate of potassium solution, as I doubt if it is in general use, and am confident of its superior efficacy:

R Potass. chlorat., 3vij;

Acid. hydrochloric., 3vij;

Rub together until greenish fumes of chlorine begin to rise, then add aq. cinnamom., 3vij.—M. S.—A tablespoonful every two hours.

This preparation contains chlorine, as will readily be seen, not only in its saline combination, but also free, and may be called the chlorinated solution of chlorate of potassium. It is the prescription of a British physician, whose name I unfortunately failed to preserve in appropriating his idea, and has cer-

tainly a peculiar potency, not only over diphtheritic processes, but in that troublesome, and just now frequent, form of throat-disease,—ulcerative tonsillitis,—the *herpes gutturalis* of Troussseau. I am well aware that a single case will not serve as a peg to hang a theory on, but it may answer for a text in connection with that first referred to. That I have never had another case of croup to treat is accounted for by two facts: the first, that I shortly afterwards withdrew from family practice; the second, that I invariably examine the throat of a child presenting febrile symptoms or acute disturbance of digestion, and attack every case of acute faecal congestion that offers itself, at the outset, with chlorate of potassium and quinine, carefully avoiding cathartics and depressants, and thus, as I believe, prevent the development of the diphtheritic poison. Had I, however, only my own meagre experience to adduce in support of the theory for which I am contending, I should be guilty of shameless presumption in airing it before a body at once so learnedly critical and so practically familiar with the facies of the affections in question. My design is rather to make use of the observations of those who have had larger opportunities and made a better use of them, in showing, first, that the analogy between these two diseases in every essential particular is so striking as to amount to a proof of identity, and secondly, that such an opinion is now steadily gaining ground among those who have most carefully studied them in their clinical as well as their pathological aspects.

Diphtheria may be defined in the light of the most recent investigations to be a zymotic disease, affecting the entire system through the presence, and probable multiplication, of a foreign living organism in the blood, having as a local manifestation an effusion of plastic coagulable material in the substance of the mucous membrane of the cavities of the mouth, pharynx, and nose, or an exudation of the same upon its surface. Its general symptoms are gradually increasing heat of skin and frequency of pulse, the latter rapidly becoming feeble, slight digestive disturbance beyond loss of appetite, and a degree of general prostration of the nervous forces quite out of proportion to the local lesion. In fatal cases, death evidently results from systemic poisoning. It is usually plainly epidemic, or contagious, or both.

As to its therapeutics, a system of depletion, whether by blood-letting, or active catharsis, or excessive emesis or profuse diaphoresis, or of contrastimulus by the prolonged use of nauseants, and notably of tartrate of antimony, is almost invariably followed by an aggravation of the symptoms, and, if persisted in, too frequently by a fatal termination. On the other hand, the free exhibition of an antizymotic, of which chlorine, either in solution or in composition with iron or an alkaline salt, appears to be the most deadly to this form of fermentative growths, and of bark or one of its alkaloids (of which quinia still stands *facile princeps*), a nourishing diet, and comparatively early resort to stimulus, will in the majority of instances conduct the case to a favorable issue.

Now, I claim that no one can take up a standard text-book on children's diseases, if the production of an author who holds the mirror fairly and squarely up to nature, instead of squinting at her through the crowquill of preconceived bias and prejudice, and read the description of these two diseases, without being struck with the close resemblance in their mode of invasion, progress, character of fatal termination, when not induced by immediate suffocation, and rate of convalescence. Even writers who believe croup to be a sthenic local inflammation are forced to admit that the febrile action is of a markedly lower grade than that which obtains in simple uncomplicated or spasmodic laryngitis. Thus, Meigs, than whom no one has described more faithfully the natural history of children's diseases, says, in treating of the differential diagnosis of these two last-mentioned affections, "The pseudo-membranous form of the disease is often preceded or accompanied by the presence of false membranes in the fauces, which is not the case in spasmodic, simple laryngitis; the symptoms of invasion of the former disease are *less acute* than those of the latter, the *fever* being *less violent* and the restlessness and irritability less marked than is usual in the simple affection, in which the general symptoms are severe from the first. The hoarseness of the voice and the cough follow a different course in the two diseases; the progress of these symptoms being slow and gradual in the membranous, and much more rapid in the severe spasmodic form. The fever is violent throughout the attack in the severe spasmodic disease, whilst in the other form it seldom reaches a high degree of intensity." He aptly describes the invasion of true croup as "*slow and creeping*." What means this "*slow and creeping*"—this stealthy and masked—advance upon the citadel of life, but the development and diffusion throughout the body of a morbid material, gradually making itself master of all the avenues of approach? What has it in common with the bold onset of a frank, declared inflammation, such as an acute pleuritis or simple laryngitis? And how closely is it in relation with the prodromic period of most of the true fevers, and of diphtheria!

Bouchut, in his admirable work on children's diseases, entitled "Traité pratique des Maladies des Nouveaux-Nés et des Enfants à la Mamelle," unhesitatingly attributes to croup two of the essential characteristics of zymotic diseases,—first, that it does not ordinarily attack the same individual a second time, and secondly, that it is an epidemic disease; and, although he avoids committing himself unqualifiedly to a belief in its contagion, he considers it safer to separate children suffering under it from the healthy.

My impression, from consulting other authorities, is strong that these three traits of resemblance must all be admitted. So much, then, for the general family likeness existing between the two affections. Let us now consider the argument from therapeutics.

Prof. Fordyce Barker, of Bellevue Hospital Medical College, New York, in a communication addressed to Prof. A. Jacobi, on the "Treatment of Croup," which was published in the *American*

Journal of Obstetrics and Diseases of Women and Children, vol. iii. No. 1, May, 1870, boldly takes the ground that true croup and false croup are one and the same disease, differing only in the depth to which the tissues are involved, excluding the croup of diphtheria, which he considers a totally different affection. Entertaining, as I do, in addition to the sentiment of respect which the opinions of so conscientious an observer and so skilful a therapist as Dr. Barker command in the professional mind both at home and abroad, that sense of deference which a pupil must unavoidably carry with him through life towards a revered master, I still find myself unable, after a careful reperusal of his paper, to accept the position which he here assumes. He appears to found it, although not perhaps avowedly, on the fact that the same remedy, administered at the outset, is, in his hands, equally efficacious in controlling both affections. This remedy is the "turpeth mineral," or yellow sulphate of mercury (*hydrargyri sulphas flava*); and the astonishing success which he has met with in its employment, never having lost a case of croup in the course of a long and intensely busy professional life, devoted in an unusual degree to the treatment of children's diseases, certainly entitles it to a most respectful trial. It must be borne in mind, however, to weigh honestly the value of this testimony, that Prof. Barker would call no case croup in which a particle of diphtheritic membrane had been observed upon the fauces. But, this aside, let us consider for a moment whether the agent which he employs does not possess properties which may render it of extreme value in both the simple spasmodic laryngitis and the diphtheritic infection. Everyone knows that prompt emesis is the one thing needful (to speak in a general way) to control and usually immediately relieve the laryngeal spasm.

Dr. Barker's reasons for preferring this particular means of emesis to all others in croup are the following: "It acts more promptly and efficiently than ipecac or alum; it is tasteless, and much more easily administered than either; it does not exhaust and depress the vital power like antimony; it is equally prompt in its action with sulphate of copper, while it is much more effective as a revulsive and sedative." He adds, "I think the active emesis from the turpeth mineral accomplishes the following results much more effectively and speedily than any other agent: it depletes the mucous membrane, by an abundant secretion of mucus which is thrown up; it removes from the larynx, by the forced expiration which it causes, any albuminous or fibrinous exudation which may be there in a diffused state, and which by remaining may become subsequently pseudo-membrane; it acts as a powerful revulsive, and thus diminishes the capillary circulation in the trachea and larynx, and thus it becomes a most effective agent in arresting the inflammatory process."

But if an emetic is universally admitted to be the requisite in the spasmodic affection, not less general is the faith in its beneficial action in the diphtheritic or pseudo-membranous. And if we were called upon to sum up the characteristics of

an agent of this class which would best satisfy the requirements and present the fewest objectionable features in the latter form of disease, we could not do so more forcibly and succinctly than he has done in the above description of the properties of this medicament. But do its valuable properties as regards diphtheritic croup cease with its power of inducing prompt emesis? I think we are entitled to return a negative answer to this inquiry, on two grounds. First, that it is an active depurating agent in causing "so abundant a secretion of mucus, which is thrown up"; but, secondly and especially, because it is a sulphur compound, and sulphur is well known to be one of the most determined and destructive foes to the microzyme which the Pharmacopœia can command. Its efficacy in destroying the disease-germ present in spasmodic cholera can, I think, no longer be questioned, and it may be as potent over the micrococcus of diphtheria. May not the beneficial action of sulphate of copper, of sulphate of zinc, and of alum, the sheet-anchor of the elder Meigs, aside from their emetic properties, be reasonably attributed to the same component? And if so, do we not see an explanation of the superior value of the mercurial salt in the fact that mercury appears to possess to a more striking degree than any other mineral the *open sesame* to the circulatory and absorbent systems, obtaining admittance not only for itself, but for any remedy with which it may be for the time in the intimate companionship of chemical affinity,—a prompter entrance into the vascular system, and more immediate distribution throughout the body? May we not also read in the same light the happy results which have led the younger Meigs to place such confidence in the mild chloride in the management of membranous croup? Is he not administering that subtle and admirable antizymotic, chlorine, with a directness and efficacy perhaps even exceeding that with which many of us accomplish the same result in the exhibition of the much-trusted chlorate of potassium?

If the commencement of Dr. Barker's treatment appear admirably adapted to cut short a case of diphtheritic croup, however, not less appropriate is its continuation should the disease fail to be thus early arrested. Carbonate of ammonium as a vascular stimulus and promoter of mucous secretion, veratrum to shield the heart and vessels from excessive fatigue and fatal prostration, and quinia to sustain the nervous forces, constitute an armamentarium with which the practitioner might well feel himself tolerably equipped to meet a case of pure pharyngeal diphtheria. Nor must it be forgotten in this connection that all the preparations of cinchona have a peculiar potency in checking fermentation, while in sulphate of quinine we again have the sulphur element entering the problem.

Under the title of "Diphtheria in its Epidemiological, Nosological, and Therapeutic Relations," Dr. Max Jaffe, of Hamburg, presents, in *Schmidt's Jahrbücher* for July, 1873, a complete *résumé* of the periodical literature of this subject during the past four years. The first portion of the paper, that which discusses the epidemiological side of the question, is mainly taken up with the mode of com-

munication and pathological histology of the disease, and the histories of recent epidemics. Numerous interesting experiments in the way of inoculation of the lower animals with diphtheritic poison, on the part of Dr. Oertel of Munich, Letzerich of Braunfels, and others, are rehearsed, especially with the view of determining whether "*in diphtheria we have to do with a merely local affection, or with a general infectious disease,*"—a question, as he well remarks, of the deepest import, as well for scientific inquirers as for the practising physician. The results are almost invariably in favor of the latter view, that which makes diphtheria a systemic disease with a local manifestation, not a local affection with a resulting disturbance of the general system. A constant microscopic element in the diphtheritic exudation has been found to be fungous growths of extreme minuteness and of immense numbers. These growths are classed as micrococcus or mykothrix. They are found not only in the diphtheritic membrane and in the mucous secretions, but also in great profusion in the blood, distributed through all the organs of the body, and even in the lymphatic vessels and glands. In some instances the lymphatics appeared to be entirely blocked up by them. Collections of these minute organisms were also noticed in the interspaces of the areolar tissue, and between the fat-cells. The kidneys appeared to be the organs to which they were more especially attracted, and in these their presence often coincided with a high degree of inflammation and microscopic extravasations of blood. The second division of the subject is devoted to the consideration of the "*Pathology and Anatomical Pathology*" of the disease, and it is to this portion that I especially desire to call attention.

Dr. Ludwig Letzerich, in an article "*On Exudation and Suppuration*" (croup and diphtheria), contributed to *Virchow's Archiv* (livi. 4, p. 493, 1871), after defining croup as a purely inflammatory process, and diphtheria as, on the contrary, caused by the deposit of a foreign fungous growth, which, piercing the epithelium, makes its way into the substance of the mucous membrane, and thus at the same time excites the diphtheritic exudation and provides for its escape,—while, I say, drawing this distinction carefully, he immediately after makes the following important admissions. First, that the diphtheritic membrane varies greatly in appearance, both under the microscope and to the naked eye, in accordance with the portion of the mucous membrane upon which it is found. On those mucous surfaces which are lined with smooth tessellated epithelium (as those of the mouth, nose, fauces, and vagina) it is usually strong and thick, and microscopically exhibits an abundant dissemination of epithelium-cells, either broken down or well preserved, and a greater or less quantity of pus-cells. On surfaces covered by ciliated or cylindrical epithelium (as the larynx, the upper part of the trachea, and the intestinal canal) it is softer and more creamy; the epithelium is completely eroded, and portions of the exudation appear, under the microscope, as mere masses of detritus, thickly strewn with fungous growths.

Second, that croup and diphtheria are developed together with extreme frequency, passing immediately into each other. Croup, he tells us, is very rarely developed with diphtheria of the mouth, nose, or fauces, but often—indeed, almost invariably—with diphtheria of the under surface of the epiglottis, of that portion of the larynx which lies above the vocal cords, in the lower part of the latter, and in the trachea. This striking fact of the co-existence of the two diseases he has had frequent opportunities of verifying by post-mortem examination. In one case the mucous membrane of the entrance to the larynx was completely destroyed by fungi, while that which lay below the vocal cords was scarcely robbed of its epithelium, simply overlaid with a very thin, creamy layer of diphtheritic exudation. The tracheal mucous membrane, on the other hand, from its commencement down to the bifurcation, was covered with a homogeneous croupal exudation, which was with tolerable ease removed as a complete tube. No fungous forms whatever were found in this cast, but a more or less regular stratification of the mass with pus-cells. The mucous membrane of the trachea retained its epithelium, freely strewn with puruloid cells, and its basal layer deprived of its ciliæ, as in pure uncomplicated croup. Death ensued in this child from collapse, induced by the entrance of fermentative fragments into the circulation and the collection and reproduction of the fungi in the internal organs, especially the kidneys and spleen.

An essay delivered before the Medical Society of Berlin by Dr. Conrad Küster (reported in the *Berlin. Klin. Wochenschr.*, ix. 18, 19, 1872), on the Nature of *Diphtheria*, provoked a very animated discussion. He boldly took the ground that from the stand-point of the practising physician it was impossible intelligently to maintain the line of demarcation between these intimately-allied forms of diseased action. Diphtheritic and croupous angina, membranous, gangrenous, and false croup, he considered it impossible to hold as distinct diseases appearing together and running the same course of symptoms, simply and only because (and this perhaps for accidental reasons) the form of the exudation is different. Pathological anatomy explains the difference in showing that in the one case the exudation is superficial, and may then be thrown off as a membrane, while in the other it penetrates deeper into the tissues, producing necrosis, and thus leading to the formation of sloughs. In both membranous and gangrenous anginas we find alike, at the autopsy, diphtheritic sloughs or strongly adherent, deep-rooted deposits, without exception, in the fauces and pharynx and as far as the edges of the epiglottis, and, as we pass into the larynx down the trachea and into the bronchi, only membranous tube-casts, easily removable. We find there a complete mingling of the two forms, and are led to the inevitable conclusion that the character of the exudation is dependent upon the anatomical constitution of the locality in which it is thrown out.

Dr. H. Senator, while supporting the ordinarily accepted view of the distinct entity of the diseases

in question, acknowledged that he had never seen a true croupous inflammation and a corresponding true croupous exudation (a fibrous net-work with concentric layers of fibrin and pus-corpuscles) affecting the mucous membrane of the pharynx, either in diphtheria or any other affection, while, on the other hand, a croupal inflammation, under the influence of a diphtheritic infection in the true air-passages, that is, a diphtheritic croup, was an undoubted fact.

Dr. Lewin, in the *Berlin. Klin. Wochenschr.* and other journals, recognizes two forms of the diphtheritic process,—a protopathic, which attacks those mucous surfaces which are most exposed to the external air, is rarely accompanied by fever, often appears sporadically, and is very amenable to simple remedies; and a deutero-pathic, which penetrates to the more protected cavities, is preceded by a prodromal fever, and gives every indication of systemic infection. This is the more purely epidemic form, and is extremely difficult to manage.

In regard to the question of the identity or non-identity of the "diphtheritic and croupous processes," he holds that in their clinical relations they present a precisely similar configuration, have the same aggregate of symptoms, and consist of the same etiological elements, but anatomically are distinguished by the fact of being deep-seated or superficial. The cause of this difference, however, appears to lie only in the pre-existing histological characteristics of the membrane attacked,—diphtheria on pavement-epithelium, croup on ciliated epithelium; and the laryngeal croup, so often recognized as an independent affection, is therefore only to be regarded as a local manifestation of the diphtheritic process. In reviewing the history of medicine, Dr. L. recalls the fact that since the time of Bretonneau, who regarded croup as essentially laryngeal diphtheria, no author had undertaken to establish a distinction between the diphtheritic and the croupous processes until Virchow, and that even he did not desire to extend his pathologico-anatomical distinction to the clinical aspect of the disease.

Further, the results of treatment and the revelations of the autopsy agree in declaring that both processes may run their course simultaneously in one and the same individual. The purely histological distinction is thus set forth. In the larynx we find two sharply-defined histological regions, that of the pavement-epithelium, extending from the pharynx, along the lingual surface of the epiglottis, thence along its laryngeal surface, upon the false and the true vocal cords, and reaching nearly to the *macula flava*, and that of the ciliated epithelium in the lower regions of the larynx and the trachea. Closely corresponding with these tracts, we often find, in autopsies, the diphtheritic and the croupous processes separated from one another by this same boundary-line. More than this, during life the same differentiation can sometimes be made out by the aid of the laryngoscope. Similar observations may be found recorded by Virchow, Rindsfleisch, and Wagner.

In support of the theory that laryngeal croup

only originates from the extension and descent of the diphtheritic affection from the pharynx, he adduces the following consideration. According to all reliable statistics, croup developed primarily in the larynx must be classed among the greatest of rarities. And even these few exceptional cases are often susceptible of other explanation. Diphtheria not seldom runs its course in the larynx unobserved; in those rare cases in which it has been unquestionably observed first in the larynx, it has in all probability taken its rise in the region of the pavement-epithelium, and finally, in cases where no laryngoscopic examination has been made, it is more than probable that a severe catarrhal laryngitis has, in consequence of the severity of its symptoms, been mistaken for laryngeal croup. In point of fact, catarrhal laryngitis may often, by a serous transudation, or a copious infiltration, or even a hemorrhagic extravasation into the areolar tissue of this portion of the larynx, induce a constriction of the glottis and simulate the tone and the dyspnoea of croup, without the presence of any croupal membrane.

In a treatise on "*Croup and Diphtheritis of the Pharyngeal Cavity, Exudation and Pus-Formation,*" Dr. Franz Hartmann, of Wiesbaden (*Virchow's Archiv*, liii. 2, p. 240, 1871), concludes that we are entirely unable to decide as to the "identity or non-identity of croup and diphtheria" from their clinical course, and that we must therefore refer to the development of the pathologico-anatomical processes for a solution of the problem. As regards the exudative process, every exudation has its origin in the vascular system, and consists of a coagulable fluid. In the production of the exudation, the capillaries and the lymphatics, which are closely connected by means of the so-called *serous* (juice) vessels, are both concerned. The anatomical arrangement of the mucous membranes is such that there is a possibility of the escape of plasma upon their free surfaces, and in diseased conditions this possibility becomes an actuality. In the pharyngeal cavity this escape of exudative material is favored by the firm compression of the mucous membrane, by means of strong muscular contractions. The primary exudation either coagulates at the spot where it is poured out, or flows down and coagulates below, constituting croup; but the subsequent exudation, in consequence of the muscles having to a considerable extent lost their contractility, is retained in the areolar tissue: that is diphtheria. The croupal exudation, therefore, always precedes the diphtheritic. Sometimes, in consequence of the inflammation being from the outset very acute, the muscular action is greatly interfered with, or even entirely suspended. We have then neither croup nor diphtheria, but angina, with or without abscess. It follows that in order to the establishment of the croupous process the inflammation must not be of a severe grade. He concludes, finally, that croup and diphtheria are not to be distinguished from each other, but are to be regarded as only different stages or grades of one and the same morbid process, no anatomical differentiation being possible.

Dr. Welsch, a physician practising in Kissingen, publishes several cases of croup and diphtheria occurring simultaneously in the same family, which, he considers, establish the identity of the croupous and diphtheritic processes, and refers to others which he met in the same neighborhood shortly after, as equally significant.

From the year 1868 to 1872, the north of Italy was the scene of a wide-spread and devastating epidemic of diphtheria, which reached its acme in 1871. So great were the alarm created and the interest excited by it that a committee of the most learned French and Italian physicians of the region was appointed to consider and investigate the subject in all its relations. This committee was unanimously of the opinion that the distinction between croup and diphtheria was one which could no longer be maintained, either from a pathologico-histological or a therapeutic stand-point.

In conclusion, I cannot summon to the support of my position a more powerful ally than Dr. Morell McKenzie, one of the highest British authorities on the larynx, whose opportunities of observation have not been greater than his powers of analysis. This writer, in his Jacksonian Prize Essay on Diseases of the Larynx, quoted by himself in the *British Medical Journal* of March 5, 1870, vigorously combats the doctrine of the distinct nature of these affections, on the following grounds: That neither is always, and both are sometimes, epidemic and contagious; that the exudation is essentially the same, being modified by its site, but presenting histologically no marked difference,—that of diphtheria having been noticed to become organized as well as that of croup; and that the sequelæ of diphtheria—albuminuria and impaired innervation—have also been observed to follow croup.

The opinions and facts just rehearsed, whether they carry conviction to the mind or not as to the point at issue, must be allowed to establish the fact beyond a peradventure that there is in Europe a large, respectable, and growing class of physicians who, however they may differ in their views of the mode of production of these two morbid results, and the accompanying pathologico-anatomical and histological changes and conditions, agree in holding that if not essentially they are at least practically, clinically, and therapeutically to be held as one and the same disease. And whether they are identical or not, this much must be allowed, that at the commencement of the attack so similar are the modes of invasion that no man can tell whether the case will prove to be one of uncomplicated or of diphtheritic croup. This was the fact in the case with the recital of which this paper opens. Fragments of false membrane were coughed up before any diphtheritic patches were seen upon the tonsils. In this view of the subject, then, remembering the deadly nature of the diphtheritic poison, does not prudence dictate that we should at once administer those remedies which experience shows to be antidotal to it and which can be of no injury should it not be present, at the same time withholding such methods of treatment as would be

contra-indicated by its existence? It will not do to wait until "the little one has become a thousand" and every arteriole and capillary is clogged with the sluggish, poisoned tide. We must destroy the germs before they have a chance to multiply.

I feel the less hesitation in urging a new departure in the management of this disease, so fearful alike in its course and in its termination, from the conviction that no plan can be suggested which will give more lamentable results than those which are universally acknowledged to follow that recommended by the systematic text-books.

A CONTRIBUTION TO OUR KNOWLEDGE OF THE VASO-MOTOR ACTION OF ERGOT.

BY H. C. WOOD, M.D.,

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IN my work upon therapeutics I have given a sufficient summary of our knowledge as to the action of ergot upon the capillary system, and have shown that it is proven that the drug does cause contraction of the small vessels, but that it is as yet unknown whether that contraction is caused by an influence exerted upon the nerve-centres or is the result of a direct action upon the vessels themselves.

It is evident that this question is not one of merely scientific interest, but that it is very practical in its bearings, since, if the latter view be correct, much better results are often to be obtained by the local injection of the drug into the part to be affected than by its administration in other ways; whereas, if ergot acts only through the nervous system it is useless to subject patients to the inconveniences of these local injections. The present investigation has been undertaken to fill up the gap in our knowledge as to the action of ergot upon the capillaries; and, as it supplements the article in my general treatise, I shall say very little about what others have done.

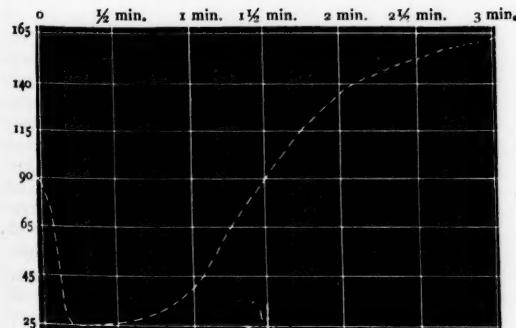
My first experiments were directed to studying the effects of the fluid extract when injected into the cellular tissue. They were two in number; but, as they are in accord with those of numerous previous experimenters, I shall not give them in detail. In one of them $\frac{3}{4}$ iii injected at brief intervals, with $\frac{3}{4}$ ss into the femoral vein, served to raise the arterial pressure from 110-120 mm. to 117-125 mm.,—a rise which is very insignificant when compared with that produced by ergotin in experiments hereafter detailed; and it appears to me that the commercial fluid extract is much inferior and more uncertain than the commercial ergotin. The latter as used in the investigation was of two kinds or brands, resembling each other precisely, one being the preparation furnished by Powers & Weightman, the other that of Rosengarten; the physiological effects were identical.

In the following series of experiments ergotin was injected into the femoral vein.

Experiment III.—A stout young terrier.

TIME IN MIN. AND SEC.	PULSE.	ARTERIAL PRESSURE.	REMARKS.
0	150	85-90	
1 m.		20-25	
1 m. 15 s.		25-30	
1 m. 45 s.		60	
2 m. 15 s.	135	95	
2 m. 30 s.		130-135	
3 m.		150-155	
4 m. 30 s.	96	145-160	
5 m. 30 s.	65		
9 m. 30 s.	95	125-145, mostly 130-140	
11 m.			
11 m. 15 s.			
12 m.	102	20-30	
12 m. 45 s.	111	Beginning to rise.	
13 m. 30 s.		55-60	
14 m. 30 s.		105-110	
17 m.	63	140-150	
27 m.		105-110	
27 m. 15 s.		30-55	
27 m. 30 s.		15-25	
28 m.		12-25	
28 m. 30 s.		30-40	
31 m.		115-120	
32 m.			
33 m. 45 s.		15-20	
35 m.			
36 m. 15 s.		25-35	
37 m. 45 s.		55-60	
40 m. 31 s.			
40 m. 45 s.		20-30	
41 m. 15 s.		13-17	
43 m. 45 s.			
44 m. 15 s.		35-40	
49 m. 15 s.	135	80-90	
54 m.		80-90	

This experiment was repeated once with an exactly similar result, and is in exact accord with those of Dr. Holmes. The whole evidently prove that ergot injected into a vein causes an immediate almost instantaneous fall of pressure, and afterwards a very great rise; also that when enormous doses are employed the arterial pressure is permanently lowered. The most curious of these phenomena is the first fall of pressure; the points to be noted in regard to it are its suddenness and its brevity. Thus, in the detailed experiment, in fifteen seconds the pressure was reduced to one-fourth its original amount, and in ninety seconds was above normal. Expressed graphically, the effect of the first injection was as follows:



Dr. Holmes believes that this first fall is produced by a sudden spasm of the pulmonic capillaries, due to the intense action of the drug first precipitated upon them in overwhelming amount. It is perfectly conceivable, and, in fact, is almost self-evident, that such a spasm, by depriving the left heart of its

proper supply of blood, should lower very remarkably arterial pressure. It is, however, no less self-evident that if ergot, by being taken into the lungs, causes such a spasm as Dr. Holmes believes, the action of the drug must be a local one; for if the ergotic spasm is of centric origin, it can make no difference whether there is much or little of the drug in the lungs themselves. The cause of this sudden fall of arterial pressure is, therefore, best studied after it has been settled as to how the capillary spasm is brought about.

If the rise of pressure be due to a spasm which is centric in origin, paralysis of the vaso-motor nerves ought to prevent the rise of pressure. On the other hand, if the spasm be peripheral in its causation, due to a direct action of the drug upon the vessels, paralysis of the vaso-motor nerves ought not to affect it. As section of the cord high up causes vaso-motor paralysis, it is evident that the following experiments are decisive.

Experiment V.—A stout, plucky terrier. At 10.45 A.M. the cord was cut in the upper dorsal region, completely, as was verified by the autopsy. The first cardiometrical observation was one hour and a half afterwards.

TIME.	ARTERIAL PRESSURE.	REMARKS.
0	103-108	
5 m.	95-100	Injected twelve grains.
6 m.	20-33	
7 m.	25-30	
8 m.	40-45	
9 m.	60-65	
10 m.	75-80	
12 m.	95-100	
14 m.	105-110	
21 m.	88-98	
22 m.		
24 m.	10-15	
24 m. 15 s.	20-25	
26 m.	45-50	
31 m.	105-110	
33 m.	100-105	
44 m.	75-80	Injected twelve grains.
60 m.	55-65	
61 m.	50-55	
64 m.	43-48	
67 m.	43-48	Dog killed.

Experiment VI.—A small but very strong and active terrier. The cord was cut completely, as verified by autopsy, in the upper dorsal region, and fifty minutes afterwards the first cardiometrical studies made.

TIME.	PULSE.	ARTERIAL PRESSURE.	REMARKS.
0	150	65-90; mostly above 80.	Injected twelve grains into femoral vein.
2 s.		35-40	
30 s.		Zero	
1 m. 30 s.	142	30-40	
5 m.	117	50-60	
35 m.		75-95, mostly between 85 and 95.	
72 m.		Has been the same since last note.	
72 m. 30 s.		10	
75 m.		20-40	
77 m. 30 s.	36	Directly after the injection fell to 10, then to 0, then vibrated between 0 and 10.	Injected twenty-four grains into the femoral artery.
80 m.		Since last note 5-15, now 0.	The respiration was momentarily suspended by the injection; now resumed, and pretty regular.

These experiments certainly prove that after division of the cord, *i.e.*, after vaso-motor paralysis, ergot is powerless to raise the arterial pressure. The result obtained was verified by cutting the cord in animals already profoundly under the influence of the drug, when it was found that the arterial pressure fell to about its usual point in dogs who have suffered spinal section. Without going into more detail, it is obvious that these results not only prove that the vaso-motor spasm is centric in its origin,—a conclusion in accord with the experiments of Eberty upon frogs,—but also disprove Holmes's theory of pulmonic spasm.

In regard to the real cause of the primary fall, it is in the first place evident that it is owing to the sudden precipitation of an overwhelming dose of the ergot upon something, since, as I have frequently proven by direct experiment, it does not occur when the remedy is thrown into the subcutaneous tissue. The experiments of Eberty indicate very strongly that, when in sufficient amount, ergot acts as a muscle-poison to the heart, a conclusion which is strongly corroborated by the final result in my eighth experiment, in which, after the movement of the mercury and all arterial pressure were at an end, the respirations still went on with fair regularity; and the thorax having been opened, the heart was found not pulsating, but in a curious state of very active vermicular movement, irregular waves of movement continually running through it. *A priori*, therefore, it seems almost certain that the sudden fall is due to the whole dose being at once thrown upon the cardiac viscus, and that the rise occurs so soon as the concentration of the poison is destroyed by diffusion through the circulation. Further, as I have experimentally found that the fall is in no wise dependent upon the nerve-centres, but occurs after section of the cord and after division of the pneumogastrics, it appears to me very certain that the phenomenon is due to a direct action of ergot upon the heart.

If the rise of arterial pressure produced by ergot be due to centric spasm, it would seem as though injection of the drug into the carotid, *i.e.*, seemingly into the brain, ought to induce an immediate rise of the arterial pressure, followed by a fall when the heart felt the effect of the drug. It is very plain, however, that in such experiments as these we have a very complex problem; that the result is due to such a balancing of actions that any irregularity of circulation must produce a very disturbing effect. I have performed two experiments bearing upon the matter. They are as follows:

Experiment VII.—A stout terrier. All the injections made into the carotid, with Rosengarten's ergotin.

TIME.	PULSE.	ARTERIAL PRESSURE.	REMARKS.
0 12 m.	150	130-135 140-150	
12 m. 4 s. 12 m. 8 s.		185 125-185	Six grains. Dog at once gave a brief convulsive and shuddering struggle.

TIME.	PULSE.	ARTERIAL PRESSURE.	REMARKS.
12 m. 15 s.		100-140	
12 m. 45 s.		60-85	
13 m.		90-120	
14 m.	150	150-160	
21 m.		145-150	
22 m.		20-30	
23 m.		105	
26 m.	123	155-160	
46 m.	129	175-178	

Experiment VIII.—A very small terrier. Injections all practised into the carotid.

TIME.	ARTERIAL PRESSURE.	REMARKS.
0	110-145 Rose immediately to 165, and then almost at once fell down to 50 and below.	Four grains. Dog at once gave a howl, and convulsive shudder or struggle.
20 m.	110-120 Fell at once to 20, without previous rise.	Six grains. Dog quiet.
30 m.	130-135 After each injection no rise, but a fall from 110-80 to 60-40; pressure 15 sec. after each.	Injected, at intervals of 20 seconds, four injections of three grains each.

In these two experiments the results were strikingly similar: the first injection in each was followed by an instantaneous very decided rise of pressure, followed, after a very brief interval, by the usual fall; whilst the subsequent injections in no case caused a rise of pressure. Whether the first rise was directly caused by the drug, or was simply produced by the violent effort the dog made, must, I think, be considered doubtful.

A MILD CASE OF CEREBRO-SPINAL MENINGITIS FOLLOWED BY BLINDNESS.

BY CHARLES SHAFFNER, M.D.

THE following case is of interest on account of the unexpected and unfortunate sequelæ:

I was called on March 16 to visit Eugene H., a bright, chubby little boy, six years old, and apparently of good constitution, whom I found suffering with headache, tongue coated with a whitish fur, constipation, tendency to nausea, and high fever. He had been complaining with these symptoms for about four days, and soon grew worse, with severe occipital headache, rather marked retraction of the head, tendency to internal strabismus, which was fully developed in a week, but lasted only a few days, with equally dilated pupils; coat on tongue turned brown, no sordes, rather obstinate constipation, and tendency to nausea. I always found his lower extremities flexed. He had subcutis tenuidinum, slight pains in arms and legs, but no convulsion, was very restless, sleepless, and slightly delirious at night, but in daytime was crabbed, and only desired to be let alone.

In two weeks he was convalescent, when we discovered that he was almost blind; he said, "I lost my eyes when I was sick." He then complained of pain over his eyes, and this, with some dilatation of the pupils, was all that called attention to the eyes.

He is now in full convalescence, but has only slight light-perception in both eyes.

Dr. Strawbridge examined the eye-ground, and found "choked disk," giving a diagnosis of impending atrophy of the nerve.

Dr. J. Lewis Smith, of New York, in his article on "Cerebro-Spinal Fever," in *Amer. Jour. Med. Sci.* for October, 1873, mentions, as sequelæ, strabismus, conjunctivitis, ulcer of cornea, cloudiness of cornea, and cataractous lens. There has never been any conjunctivitis, iritis, or keratitis in my case, and at present the media are clear, but the pupils still dilated. The hearing was also very imperfect for a few days.

The treatment was chiefly bromide of potassium and quinine, with citrate of potassium as a febrifuge. Calomel and rhubarb were used to relieve constipation. Sinapisms were placed on the extremities. He is now taking cinchona and iron, with cod-liver oil.

Dr. Albert G. Heyl made a careful ophthalmoscopic examination, and has made the following report: "On account of the age of the child, it was impossible to obtain a correct record of the amount of vision, or properly to estimate the extent of the paralysis affecting the muscular apparatus of the eye: the former, judging from the movements of the child, was considerably impaired.

"There was no ptosis. Both recti externi were paralyzed, especially the left, giving rise to marked internal strabismus on that side. The third nerve on the left side was also implicated, as was evidenced by the left cornea occupying a higher position than the right. Both pupils were widely dilated. Media perfectly clear. In the right eye hypermetropia $\frac{1}{2}$, in the left hypermetropia $\frac{3}{4}$, existed. The fundus of each eye presented a marked example of the 'choked disk': the distinct swelling of the papilla, its clouded, reddish appearance, the radiating stripes along the course of the nerve-fascicles, and the dilated and tortuous retinal veins, were all sufficiently pronounced in character to render the diagnosis easy. There were no ecchymoses. The apex of the left papilla was best defined with a +10; that of the left, with a +12."

TRANSLATIONS.

ENDOSCOPIC EXAMINATION OF THE URETHRA AND BLADDER.—Dr. J. Grünfeld, an assistant of Prof. Sigmund, of Vienna (*Wien. Med. Presse*), being struck with the fact that the results from the use of the endoscope in the diagnosis and treatment of diseases of the urethra have not been commensurate with those attained by the use of the laryngoscopic mirror, sought to devise some simpler form of apparatus than the instrument of Désormeaus and its modifications. He finds that he can make satisfactory examinations of the urethra by means of an ordinary catheter with some modifications, to which he gives the name of urethroscope. In the construction of this, two objects have to be borne in mind: the instrument must bear a proper relation to the individual peculiarities of the case, so as not to injure the organs under examination, and provision for adequate illumination must likewise be made. Instruments, therefore, of varied form will be needed, but they are all made of metal, blackened upon the interior, and provided with a funnel-shaped expansion at the end which is exterior to the urethra.

The simplest form and the one which is available in the largest number of cases is a straight tube, the end of which is closed with a plain plate of glass. This should not be placed vertically to the axis of the tube, but at an angle, so that the rays of light used for illumination will not be thrown back from it. The tube of the instrument must be carefully oiled before introduction. Dr. Grün-

feld uses for illumination either sunlight or that of an ordinary argand lamp, throwing the rays of light into the funnel-shaped end of the tube with the ordinary laryngoscopic mirror, which he employs either upon the forehead or in preference held in the hand. The mucous membrane of the urethra can be examined from the meatus urinarius to the orifice of the bladder, and by thrusting the tube still farther onward the surface of the posterior wall of the bladder itself comes into view, and by moving the instrument different fields of view are obtained. He uses also a second form of the urethroscope which is not so available for making examinations as for topical applications, in which the end of the tube is not shut in by a plate of glass. When this is to be introduced, a conductor must be first placed inside the tube, as without this precaution the operation causes pain. In these two forms of the instrument the mucous membrane of the urethra is presented to view in the funnel as a cone with folds converging to the centre of the field of view. Pressure excited at the edges of this tube may give rise to some disturbance in the capillary circulation, and thus cause some change in the natural color of the mucous membrane. To obviate this pressure and consequent source of error, a third form of the instrument was devised, in which the end of the tube is closed, and at a short distance from the end there is a window in the side, closed with a plate of glass. Beneath this there is a small mirror at an angle of forty-five degrees, so that the light may be reflected parallel to the axis of the tube. There is also a fourth form, in which the catheter is curved, the window being made upon the convexity of the curve. These windows can be made of plain glass, or of glass which has been ground to correspond to the convexity of the catheter. The catheter employed corresponds to Nos. 18, 22, and 24 of Charrière's scale. The examinations are best made with the patient lying upon the back, with the thighs flexed; but if the outer half of the urethra is to be examined, the patient can be in a standing posture. This simple apparatus certainly presents many advantages over the complicated machinery of the endoscope; the special illuminating facilities are not required, and the introduction of the catheter is not so painful to the patient.

W. A.

FR. MOSLER (*Berliner Klin. Wochenschrift*) thinks that the introduction of large quantities of fluid into the intestine is advisable under the following conditions, in addition to those suggested by Simon: 1, in dysentery, when, after the irritating discharges have been washed away, solutions of a disinfecting and astringent character may be introduced; 2, to increase the amount of bile in various forms of icterus, and also to favor its expulsion; 3, to wash out any remains of tape-worm that may remain after its partial expulsion, and also for the removal of seat-worms. In the latter case he advises the addition of half a tablespoonful of benzine to every two pints of fluid used. W. A.

CAUSES OF CRÉTINISM.—Dr. Klebs has made a number of observations with the object of ascertaining, if possible, some at least of the causes which go to produce cretinism in certain districts of Switzerland.

A series of analyses of the water used for drinking-purposes in different localities, compared with the comparative frequency of the disease in such places, seems to indicate the presence of a large percentage of the sulphates of calcium and magnesium as having an undoubted influence in causing the affection in question. —*Archiv f. Ex. Path.*, Feb. 1874. A. V. H.

PHILADELPHIA
MEDICAL TIMES.
 A WEEKLY JOURNAL OF
 MEDICAL AND SURGICAL SCIENCE.

The Philadelphia Medical Times is an independent journal, devoted to no ends or interests whatever but those common to all who cultivate the science of medicine. Its columns are open to all those who wish to express their views on any subject coming within its legitimate sphere.

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EDITORIAL.

DENTISTRY.

THE amount of angry comment which the little birds of whom Solomon speaks have brought to our editorial sanctum, concerning an article on oral surgery that appeared some time since in our columns, has astonished and, we may add, amused us. The most plausible explanation is to be found in the fact that the members of the profession supposed to have been slighted really know that they are laying claim to a position for dentistry which it does not at present deserve, and which the world does not grant. A condition of extreme general peripheral sensitiveness marks the existence of a spinal or centric nervous weakness in the moral as well as in the physical world, and nothing is so inducive to the production of this weakness as the knowledge that we are claiming or pretending to what we do not possess. The real duke laughs when he is taken for a commoner, but the shoddy duke flies into a passion. When any one knows he is right, he is usually tolerant of discussion. In this innate sense also lie, we suppose, the sources of the self-laudatory speeches which are so abundant at dental conventions. The true Hercules does not deem it necessary to be always proclaiming his strength, or the man of robust health to be constantly telling his friends that he is well.

Whether our explanation of the exceeding sensitiveness of our friends the dentists be or be not correct, the fact remains that dentistry is not looked upon at all by the medical profession as in

the slightest degree co-equal with medicine, that the degree of *doctor* of dental surgery is viewed with a great deal of amusement and a little vexation, and that the claim that dentistry is a branch or specialty of medicine is generally met by internal cachinnations, whatever external behavior the laws of politeness may enforce. These may be hard things to hear, but we hope our dental friends will not be angry ; they are not the opinions of the *Times* or of its editors, but are the simple facts of the case,—facts which it behooves those who wish to see dentistry placed upon a higher plane to recognize.

We are not now speaking of dentists, but of the dental profession. There are many dentists of the highest culture and of the most worthy social characteristics, precisely as there are such men in all of the higher walks of life ; but certainly, even if dentistry in the abstract is worthy of a position as a medical specialty, the living, concrete dentistry can only gain such honor by a complete reorganization of the profession.

The dentist formerly acquired his art in the office of his predecessor, and it was not considered necessary for him to study in any more extensive sphere. As time went on, and the attractiveness of the calling attracted more and more able and cultured men, aspirations rose higher and higher ; dentists began to demand a more extensive education, and the dental colleges were founded. But now another step is being attempted, and a claim is put forward for a recognition of dentistry as a medical specialty.

In considering this claim, the great difference between dentistry and such real medical specialties as ophthalmology must not be lost sight of. In the first place, dentistry originated, or at least has grown up, entirely outside of the medical profession, whilst the true specialties have originated and been cultivated solely inside the profession. In the second place, dentistry constantly asserts itself as something outside of the medical profession, whilst the specialties do not. Every dentist announces himself as such upon his door-plate or window-sill, whilst a ban is laid upon the man who labels himself in the same way as an oculist or an aurist. In the third place, the dental profession is saying to the world day in and day out, by its actions, that a general medical culture is of no use, or at least is not a necessity to the dentist, whilst the specialist insists that before special studies are undertaken the candidate must have had a thorough general medical education.

The dental colleges have been a great aid to the dental profession, and, indeed, whatever claim den-

tistry really has to be called a profession rests almost exclusively upon their labors. Yet they are an insuperable bar to its ever becoming a medical specialty, and the degree of D.D.S. is the badge of a partial culture which must shut out from the medical ranks every one who wears no other insignia,—a fact of which the dentists seem painfully aware, since so soon as any one of them takes a degree in medicine the D.D.S. disappears in a twinkling from door-plate and window-shutter. So long as the dental profession, by their deeds, say that such half-culture is all that is necessary for a dentist, why should the members complain if the world and the *Times* agree with them and assign to dentistry the position which it at present holds?

There is only one way by which a higher position can be achieved, and the first step is the abolition of the dental colleges and an enforcement of the idea that a general medical education must precede the special one. If we are correctly informed, at a recent meeting in New York, Dr. Robert Arthur, a prominent dentist of Baltimore, proposed that students entering the specialty should graduate in medicine and afterwards pursue special studies under suitable instruction, or else that the student should select such schools as afforded, during the summer, special courses of lectures, and other facilities for studying dentistry.

The latter seems to us a most happy idea, and, if dentists are to be doctors, the plan suggested is the most feasible. It appears to us that it would certainly be to the interest of the medical schools to offer the facilities; and although, as stated in a previous editorial, we do not perceive the necessity for this general culture in those who practise dentistry, and doubt the possibility of enforcing any expensive education upon the students, yet it may be that on trial we shall be found to be mistaken. This much we can assure our friends the dentists, that just so soon as they comply with the universally adopted rules of the medical profession, and measure up to its standard, that profession will receive them with open arms,—not because they are dentists, but because they are doctors.

THE little town of Brives, in France, has experienced a sad calamity, in the form of an epidemic of syphilis. During last year it was found that many women recently confined were affected with a strange disease, which was soon recognized as specific. When the nature of the malady was discovered, the town was almost convulsed with domestic disturbances,—husband against wife, wife

against husband, family against family, as men and women strong in their own innocence accused each other of infidelity to the marriage-bed. The number affected was quite large: fifteen women, nine husbands, and ten children are known to the authorities, whilst many, it is believed, have concealed from the world their infection, physicians of eminence asserting that they knew of such cases. After a time of great disturbance, the cause of all the trouble was found to be a midwife, who had contracted a chancre upon her finger in the discharge of her duties, and had carried the poison from house to house. After the discovery the moral thunderstorm subsided, and nothing of evil, beyond the wrecked victims, remained.

THE human intellect passeth human understanding. If it reaches up almost to the infinite, so does it sink down to the infinite,—science and folly, twin brethren, dwelling in that wonder of wonders, the human brain. The nearest approach to the infinite of folly we have as yet met with is in some specimen pages of Allen's *Encyclopædia of Homœopathic Materia Medica*; the provings of aconite yielding some two thousand symptoms, including accurate visions of friends hundreds of miles away.

A TELL-TALE STRAW.—Among the prizes at a recent homœopathic Commencement was a hypodermic syringe. *Another straw.*—In the journal to which we are indebted for the above information we notice the advertisement sheets chiefly occupied by Tilden & Co.'s price-list of their pills and granules. "As honest as a homœopath" bids fair to become a proverb.

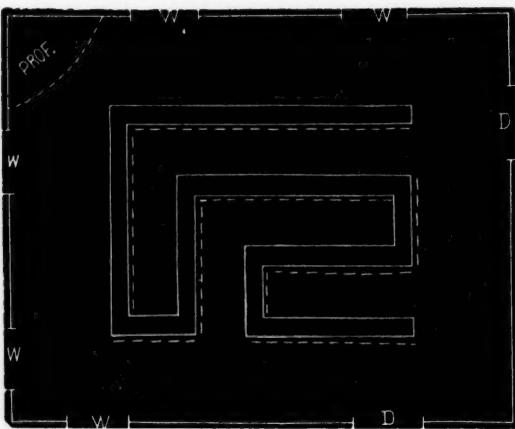
CORRESPONDENCE.

THE following is an extract from a letter to the editor, written at Breslau, East Prussia, by a highly-gifted physician now pursuing his studies abroad. It was not written for publication, but has been so entertaining to the editor that he has thought it would interest the readers of the *Times*.

BRESLAU, EAST PRUSSIA, April 9, 1874.

Among the men that most interested me in Berlin was Virchow. He is the best lecturer that I have ever heard. His utterance is clear, language simple and elegant, manner usually quiet, but at times animated, and, with the exception of a little drawl now and then, his elocution may be said to be almost perfect. He gives one the impression that his thoughts and words

come freely and abundantly, and that all he has to do is to *pour* out his ideas in any style that he sees fit. Indeed, he talks in very much the style that his Pathology is written (it reads much pleasanter in German than in English), and this is more noticeable in his lectures on *General Pathology*. His skill as a speaker is no doubt very much dependent upon his duties as a member of the German Parliament, which, unfortunately for the students of pathology, keep him very busy. He lectures three times per week on Special Pathology and four times on General. The lectures on Special are supposed to begin at nine A.M. and last till eleven, but, as he is never punctual, they are very much shorter. His irregularity has caused a great deal of dissatisfaction among the students, and one morning that he was later than usual they filed out of the room as he appeared at the door. That was an extraordinary thing for such decorous creatures to do. The Pathological Institute has been lately refitted, and the room devoted to his morning lectures is lofty, well lighted, and handsomely painted in distemper. The arrangement for the students is a very convenient one: it enables all to see, and each in turn to examine the specimens without trouble. The form of the table you may get from this enclosed diagram. Along the front



edge of the table is a little railroad-track, three or four inches wide, and sunk two inches below the surface. The wooden trays holding the specimens are readily fastened by a few turns of a thumb-screw to little brass platforms with grooved wheels which fit this track, and can be easily pushed along from one student to another without taking too much attention from the lecturer. In one corner of the room is a platform, upon which he stands, having at his left a large movable (elevated or lowered) blackboard, and at his right a sort of side-board, convenient for small preparations. His use of the blackboard is constant, and from long practice his drawings are easy and skilful, and are a great help to his lectures. There is an elaborate description of this lecture-room in the *Berliner Wochenschrift* (I don't remember the number). If you want a good nap after listening to Virchow, go to Frerichs's auditorium. It is on the second floor of the hospital building, and is a long

low room capable of seating about one hundred and fifty students, the seats rising one above the other towards the back of the room, and it opens at one end into the wards, and at the other into a hall-way where are hooks for students to hang their coats and hats. The room is usually full, and, it not being well ventilated, the air in a few minutes becomes almost suffocating. Happily, the "academic quarter" cuts his lecture-hour down to forty-five minutes. His station is in the centre of the little arena between the rows of seats and the folding-doors leading into the wards. A few feet from him on either side are usually seated in a semi-circle a number of doctors, who, together with the students, always rise with great ceremony when he enters. A patient in bed is wheeled or carried in from the neighboring ward, and, addressing the student whose turn it is to appear in the arena, he begins. He speaks in a low, melancholy tone, and rarely raises it, so that after a while it becomes very monotonous. His manner is languid, and his enunciation (to a foreigner) very indistinct. It seems to be a great effort to him to talk, and even when he makes his examinations his motions are slow. Now and then he condescends to a witticism, and the rustle with which his auditors receive it, and which breaks the "awful quiet," has something *solemn* about it. Precisely at twelve he ceases. The student to whom his remarks have been addressed has the privilege of following the case to its termination,—of entering the wards day after day to note condition, treatment, etc., till either recovery or death.

Traube, whose lectures upon diseases of the chest were very interesting, is a far better speaker than Frerichs. Although somewhat older than the latter, he has much more vivacity. He keeps his ears closed with cotton, in order (it is said: I can't vouch for it) to preserve his acuteness of hearing. And he believes in Selters Wasser with warm milk to relieve the cough of phthisis and pneumonia. This remedy, by the way, is very much used, and if the milk is of the right temperature—not too hot, nor lukewarm—it is quite agreeable. I have tasted it repeatedly. Some persons object to it at first, but gradually acquire a liking for it. Are you interested in the surgical clinics? At Langenbeck's you will find everything, from the pulling of a tooth up to the resection of joints. It is a very poor clinic for every one but the student who is called into the arena. The professor has so many assistants that only now and then can a good view of the patient and operation be obtained, and, besides, the course and result of the case are not observed by the students. Bardeleben's clinic is better. This is in a large new brick building in one of the quadrangles of the Charity Hospital. It is a two-story building, with four wards, and a corridor on each story. The upper story belongs to Bardeleben, who has also an auditorium off the corridor, and the lower story to Wilms. The latter, by the way, is said to be the most skilful operator in Germany. Bardeleben meets the students in the wards at 8.30 A.M., and they make the rounds with him. The dressings are removed and renewed in their presence, and he com-

ments or calls their attention to practical points as he passes from patient to patient. At ten he enters the auditorium, and patients for operation are brought to him. This is called his lecture on operative surgery. At eleven he makes a pause for about fifteen minutes, during which the room is cleared, and a blackboard is brought in, and then he lectures till twelve on the science of surgery. Is not that admirable? And all this takes place every day. He is a firm believer in the anti-septic treatment of wounds, and the method of Lister is carried out with great exactness. Here also in Breslau at the surgical clinic the method is employed, but not with the same care. They here use the warm bath as a hygienic measure with greater frequency and regularity than I have elsewhere seen. For instance, a man suffering from pyæmia was daily placed for fifteen or twenty minutes in a *warm* bath, and always appeared brighter and better for it; and this was continued up to the day of his death. It was employed without any reference to his temperature, etc. For the reduction of temperature in surgical cases quinine is firmly believed in. As an illustration, Dr. Viertel, Prof. Fischer's house-surgeon, showed me the temperature-table of a patient who had been brought in suffering from a severe contused wound of the left hand, in which sloughing took place. On the day after admission his temperature rose from 38° (Celsius) to 40° (about 105° Fahrenheit). He received at night two grammes (about thirty grains) of quinine dissolved in water, in divided doses,—*i.e.*, he took half the quantity, and then in half an hour after the remainder. The next morning the temperature was 37.5°—nearly normal. In three or four days there was another rise to 40°, and the dose was repeated. Again the temperature fell to 37.5°, and never rose above 38° after that, but has remained at normal 37° ever since. This was the sixteenth day after admission, and the wound was nearly healed. I don't attach much value to that as an observation, for I don't know the condition of the wound, etc., on the days of elevated temperature, but the case was shown to me as an illustration of the power of quinine, and so I give it to you. I am surprised at the amount of clinical material in this city. It is a university town of only 171,000 inhabitants, and yet they have a large hospital containing nearly one thousand beds, besides a number of others of from one hundred to two hundred beds belonging to "deaconesses" and "sisters" and "brothers" of various orders. Very many of the patients come from the province of Silesia, and that may account for it. The mortality also is *very satisfactory*, for there are about three post-mortems per day, and an abundance of pathological material. Cohnheim is the Professor of Pathological Anatomy. At present he is out of town, seeking, in a change of air, relief from a troublesome laryngitis. It is whispered that he has phthisis. It is too bad, for he is a very enthusiastic teacher. Did you know that Rindfleisch had left Bonn and gone to the University at Würzburg? The Vienna people are looking for some one to take Rokitansky's place. They made a big offer to Von Recklinghausen, which

he refused, preferring to remain at Strasburg. They offered him 12,000 gulden (\$6000) per annum, a share of the students' fees equal to about 4000 gulden more, also to build him a new and complete Pathological Institute, and to give him four or five assistants.

PROCEEDINGS OF SOCIETIES.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

A CONVERSATIONAL meeting was held February 11, 1874, at 8 o'clock P.M.

The PRESIDENT, DR. W. L. ATLEE, in the chair.

Dr. WASHINGTON L. ATLEE called the attention of the Society to a little instrument in frequent use by the physician and surgeon,—viz., THE CAUSTIC-HOLDER. After having tried every form of holder, including hard rubber, found in the shops, and having one after another destroyed by the corroding influence of the daily use of nitrate of silver, he had Mr. Gemrig to construct one, under his directions, of platinum and gold, which answered an admirable purpose. This instrument defied the destructive action of the caustic. But still there was one defect in common with all caustic-holders,—viz., *after using up the stick of caustic there still remained in the grasp of the holder a small end that could not be conveniently utilized, and was necessarily wasted.* Frequently, in attempting to remove this remaining portion from the holder in order to substitute it by a longer piece, it would crumble up, and many of the particles would remain strongly adhering to the instrument, requiring a loss of time properly to remove them. Generally, however, these waste ends were removed without breaking them, on doing it immediately after the holder was used and before it had time to dry. Having occasion to use a large amount of solid nitrate of silver, these waste ends accumulated to a very great extent, and, as they were too costly to throw away, he endeavored, by several methods, to utilize them. He finally adopted the following simple plan,—viz., *a piece of hard rubber was melted (like sealing-wax) over a flame, and the end of a lead-pencil charged with a small portion of it. The caustic was pressed on this while still soft, and in a few moments the bond of union was perfect, and the holder ready for use.* He soon found this holder economic to the greatest degree, as it enabled him to use up even the smallest particles.

For office use Dr. Atlee has several of these holders charged with different-sized pieces of caustic, from the smallest fractions to pieces two and three inches long. In using these holders the caustic itself will break rather than separate from the cement. After using up the caustic, it will be found that the rubber will have become deteriorated and unfit for further use. It must then be melted and wiped from the handle, and a fresh supply added. For pocket use Dr. Atlee still uses his old platinum holder, but in a different way. He places in its grasp a cylindrical piece of wood about one inch in length, to which he seals the caustic in the way above stated. He took from his pocket his caustic-holder and exhibited it, stating that he had just returned from a journey of twenty-three hundred miles, and that the attachment still remained unbroken.

Dr. Atlee stated that he had such an unlimited and extended experience in the use of this holder that he could recommend it without hesitation as the most simple, the most satisfactory, and the most economical instrument in use. He has used no other for

the last fifteen or sixteen years. During this period he had repeatedly brought the plan to the notice of his brother-practitioners.

The doctor brought with him several holders, such as he uses in his office, in order to exhibit them to the Society. They were brought here already charged, as he was in the habit of using them. But upon taking them from his pocket and unwrapping them he found the longer pieces of caustic broken. On examination, however, it was noticed that they had not separated from the bond of union. Some of these holders were ordinary pen-holders, and sticks of similar character.

He said that he would now instruct them how to make a holder; and, pulling from his pocket a hard rubber ring-pessary, he remarked that he would startle the members of the Society by stating that he would now show them the best use, as a general rule, to which it could be applied. Heating a part of it over the gas-light until it was softened, he then charged the end of a stick with a small quantity, sufficient to form a bond of union between it and a piece of caustic, and pressed the latter against the charged point. It soon hardened and formed a firm union. He purposely gave it an angular inclination, to show that with his simple plan any direction can be given to the caustic to suit the convenience of the operator, which he thought was an additional advantage over every other instrument.

Dr. ATKINSON said he hoped that Dr. Atlee would at an early day give his views as to the employment of pessaries. He thought the gentleman did not entirely discard them.

Dr. B. LEE then read a paper on the "Practical Identity of True Croup and Diphtheria."

Dr. HAMILTON said that notwithstanding the ability shown by the lecturer in endeavoring to render positive, or at least probable, the identity of diphtheria and croup, the evidence in opposition to this view he regarded as so definite and strong in character as to be wellnigh or quite irrefutable. A few clearly-marked points of divergence may be mentioned. Croup prevails occasionally in an epidemic form; but even here the more frequent attacks can generally be referred to some appreciable exciting cause in close relation with a peculiarity of the season or state of the weather. In diphtheria many severe epidemics have occurred where this relationship, if it existed at all, has scarcely been noticed. The number of persons attacked in an epidemic of croup, whether in a community or in a family, is small when compared with what frequently happens in diphtheria, so that the latter is found to be in many cases beyond all comparison more destructive in its progress than is ever witnessed in the former disease. To effect this result we may perhaps rationally assign, as the causative influences, contagion, and some peculiar telluric and atmospheric condition of an occult character. The prominent symptoms in croup are local, succeeded, of course, in violent or fatal cases, by systemic disturbances indicative of an untoward issue. In diphtheria, constitutional symptoms are, as a rule, first observed, and continue throughout the attack, whilst, significantly enough, in some cases the local affection is but slightly developed, or wanting. The crupal condition of the respiration noticed in some attacks of diphtheria is explained by the anatomy and physiology of the parts invaded; yet a severe and wide-spread epidemic must be admitted to exert an influence upon other co-existent disease. Whilst there are no special sequelæ to croup, diphtheria, on the contrary, is in this respect pre-eminently conspicuous in the paroxysms which have attended some epidemics of the disease, affecting sometimes twenty-five per cent. of those attacked. Albuminous urine in croup is exceptional; in diphtheria it is common, indicating an essential difference in the pa-

thology of the two diseases. Other points of divergence may occur to and be expressed by members.

Dr. J. COLLINS agreed with Dr. Hamilton that there was a difference in the two diseases. The fact that we had abandoned treatment did not show that it was otherwise. He had heard Dr. Keichline say that many years ago he had used chlorate of potassium and tonics. He himself was very fond of sulpho-carbonate of zinc topically. He uses the sulpho-carbonate of zinc in the strength of $\frac{3}{i}$ to $\frac{3}{i}$ for the throat-trouble; and in gonorrhœa two to five grains to the ounce. The doctor questioned the propriety of the word "orthodox."

Dr. LEE agreed with Dr. Collins that the word "orthodox" in the connection in which he had employed it was liable to misconstruction, and thanked that gentleman for the opportunity of making an explanation in regard to it. He intended to describe by it neither the opinions nor the practice (especially not the latter) of individual members of the profession, or even of the great mass of the profession,—the active working practitioners of the day,—but rather that traditional lore which is handed down from generation to generation in our systematic text-books. Every writer of a system of medicine or surgery has a thorough knowledge of some one branch or department to which he has given special attention. On this subject he speaks from experience, and his teachings are practical and useful. On all others he but reproduces, often unintentionally, the dicta of his professors, or copies from the systems of others. Wishing to make his work an enduring monument to his fame, he must mould it into a grand symmetry. He must have a central theory around which everything must crystallize, to which everything must conform. Such stubborn facts as cannot be made to square exactly with his pre-conceived plan must be kept out of sight or explained away, and hence the mass of the volume becomes partisan and misleading. Leaving out of view the exacter fundamental departments of anatomy, physiology, chemistry, and *materia medica*, he doubted whether the influence of such works was not, on the whole, injurious. He was confident his experience was not singular, that much that he had learned in his student-days he had been obliged to unlearn as he found himself face to face with disease. It was an open question in his mind whether it would not be better to place in the hands of the student earnest practical monographs than to cram him with these sifted compendiums which aim to do all his thinking for him.

Dr. ATKINSON thought that monographs by the masters in the profession were far preferable to the voluminous text-books. He believed that if the valuable papers read before this Society were published in pamphlet form it would reflect credit on the Society and be made to pay.

GLEANINGS FROM OUR EXCHANGES.

RETENTION OF URINE (*Medical Record*, March 2, 1874).—Dr. S. Fleet Speir reports a case of retention of urine from enlargement of the prostate, occurring in a man æt. 64. Repeated attempts at catheterism having failed, the bladder was emptied by means of an aspirator, and this operation was repeated fifteen times without causing the slightest discomfort or injury. Internal urethrotomy was performed, although there was no genuine stricture, and was followed by the introduction of a catheter, which, after some difficulty caused by obstructing mucus, was found sufficient to empty the bladder. Dr. Speir calls attention to the great accumulation of mucus that may take place in

the bladder after repeated tapping with the "aspirator." The upper portion of the urine is usually drawn off (the patient lying upon the back), and there is a constant accumulation or deposit of mucus and salts at the bottom of the bladder; and in cases of vesical irritation or inflammation it may become *very dense and tenacious*, obstructing the eye of the catheter and giving rise to the suspicion, on the part of the surgeon, that his catheter has not reached the bladder, or that there is but little urine present, when in fact the reverse is true, and all that is needed is a sufficient force to compel the thick mucus to pass. In cases where repeated tapping is likely to be needed, the bladder should be injected through the tube of the aspirator, and the fluid withdrawn again by the same means, thus preventing the accumulation of mucus.

RESEARCHES ON THE EFFECT OF FOOD ON THE COMPOSITION OF THE BONES.—H. Weiske and E. Wildt (*Zeitschrift für Biologie*, 1873, Band ix. Heft iv. p. 541), in a series of investigations carried on upon goats last year, showed that although the withdrawal of lime or of phosphoric acid from the food of adult animals led to fatal consequences, yet that it had little or no influence on the composition of the bones, and, in particular, did not make them more friable. The present series of researches was made with a view of determining whether any such influence was exerted on the bones of young animals. The animals selected on this occasion were Southdown lambs, about ten weeks old. One of these was fed upon food poor in phosphoric acid, a second on food poor in lime, and a third on normal diet. After the lapse of fifty-five days, various bones were analyzed, and the general result was, that just as in adults so in young animals: no remarkable change was produced in the composition of the several bones by the difference in the diet, or, in other words, the composition of the bones is independent of the nature of the food. The bones were, however, stunted in their growth.

DRAINAGE IN CHRONIC CYSTITIS (*Virginia Medical Monthly*, April, 1874).—Dr. Hunter McGuire reports a case of chronic inflammation of the bladder, of eight years' standing, in a woman æt. 41 years. He introduced a piece of fine gum tubing, perforated at the end, and allowed it to remain in the bladder for six weeks, it being withdrawn only for purposes of cleansing, or for the substitution of new pieces in place of the old. During this time the patient was kept in bed, and the urine collected in a urinal; but at the end of that time the free end of the tube was fastened to a gum bag which was attached to the patient's thigh. She wore the tube for about four months, constantly improving. When it was withdrawn, she had at first complete incontinence of urine, but the bladder gradually recovered its power, and a complete and permanent cure resulted.

VOMITING AND HÆMATEMESIS FROM CONSTIPATION (*The Lancet*, March 28, 1874).—Dr. Ogle reports the case of a hysterical girl, in whom obstinate and almost constant vomiting, with profuse hemorrhage, was found to depend upon constipation. Under the use of purgatives—calomel and jalapin—and small doses of sulphate of magnesia, with enemata and suitable mild diet, all symptoms by degrees disappeared, the pain being greatly relieved by hot spongio-piline saturated with laudanum applied to the abdomen, and the vomiting by hydrocyanic acid draughts.

RESECTION AS A REMEDY FOR ABDUCTION OF THE GREAT TOE, HALLUX VALGUS, AND BUNION (*Medical Record*, April 15, 1874).—Dr. A. Rose details a number of cases in which resection was performed, and concludes therefrom that resection of the head of the first

metatarsal bone for abduction of the great toe is a safe operation, when, as after-treatment, submersion in warm water is adopted.

Resection is equally safe as, and furnishes a more useful limb than, amputation.

Resection in old and obstinate cases of hallux valgus is to be preferred to orthopaedic appliances.

Finally, resection, properly made, leaves the limb without apparent mutilation, and in a condition as useful as the healthy and sound foot.

STRicture OF THE URETHRA (*New York Medical Journal*, April, 1874).—In concluding a long and able paper on "Urethrotomy, External and Internal," Dr. Fessenden N. Otis makes the assertions that stricture, as ordinarily met with, is absolutely within the reach of curative measures; that if completely divided, and this division maintained until healing of the parts has occurred, no recontraction can ever take place; and that the division of stricture is not more hazardous, to say the least, than rapid, permanent, or even temporary dilatation.

He says stricture may be present before difficulty in urinating occurs; it is always present when gleet is present,—gleet, as a rule, meaning stricture. Dilatation of strictures is, at the best, but a temporary expedient,—valuable in close stricture when urination is interfered with and dividing-instruments cannot be introduced; but dilatation is not only without permanent value, except in such cases, but it is pernicious, inasmuch as, while it is never curative, it takes the place of curative measures. He concludes by asserting that nothing short of complete division of strictures can ever result in radical cure.

GONORRHOEA, GLEET, ETC.—We have recently known a number of very obstinate cases of gleet relieved by the introduction of a catheter, smeared with mild zinc ointment, once or twice per day. Many recent cases of gonorrhœa are much relieved by the same means, with the addition of a little carbolic acid, sulphate of zinc, or nitrate of silver. An injection containing about two grains of sulphate of zinc to the ounce of water, and the whole made thick as cream with finely-powdered golden-seal (*Hydrastis Canadensis*), is deemed worth from \$500 to \$1000 by those who have been very speedily cured by it. At least, such is their verbal estimate of its value. It is thrown into the urethra, and allowed to remain as long as it will.—*Medical Times and Gazette*.

FOREIGN BODY IN THE BLADDER (*Medical Record*, March 2, 1874).—In removing a piece of glass tube from the bladder by perineal section, Dr. George C. Smith resorted to the ingenious device of coating the jaws of the forceps with molasses candy, thus securing adhesion and protecting the glass from fracture, and also, the candy being soluble in the urine, not leaving behind any nucleus for future calculus.

THE LOCAL TREATMENT OF CARBUNCLE (*The Lancet*, March 28, 1874).—Peter Eade, M.D., strongly recommends the local use of carbolic acid in carbuncle. He has employed a solution of one part of the acid in four or five of oil or glycerin, and in those parts with which it came in actual contact it had a marked beneficial effect, retarding the circumferential spread and checking or aborting the carbuncular inflammation.

CHLORAL IN TETANUS (*Indian Medical Gazette*, March 2, 1874).—Dr. John Meredith reports a case of traumatic tetanus successfully treated with chloral hydrate, rest, quiet, and nourishment. The chloral was given thrice daily, in twenty-grain doses, and seemed to control the spasms effectually.

MISCELLANY.

THE BURGLAR AND THE SKELETON.—A "skeleton in the closet" is not generally considered a pleasant thing to have, but a recent occurrence in Greensburg, Pa., shows that it may sometimes answer a good purpose. A burglar broke into a physician's office in that town, and, opening a closet (while his companion with a dark-lantern was in another part of the room), got his hands between the jaws of a skeleton, which, being adjusted with a coil spring and kept open with a thread, closed suddenly on the intruding hand by the breaking of the thread. Startled at being thus seized, he uttered a faint shriek, and when his companion turned the lantern towards him and he beheld himself in the grim and ghastly jaws of Death himself, he became so overpowered by fear that he fainted and fell insensible to the floor, pulling the skeleton down upon him, and making so much noise that his companion fled immediately. The doctor, alarmed at the noise and confusion, hastened into the office, and secured the terror-stricken burglar, still held by the skeleton.

STUDYING FOR A PROFESSION.—A young independent New Englander, who had an eye on No. 1, was studying for the ministry in one of the one hundred and eight theological schools in the United States, and when about to graduate he found out that this was one of the worst-paid professions, as people in general care more for their bodies than for their souls, so at the nick of time he changed his mind, and studied medicine in one of the ninety-two medical colleges. When almost through this very useful course of training, he discovered an important fact, namely, that people care more for their pockets than for their bodies, or for anything else. This settled the matter for him; he again changed his mind,—this time definitively: he went to study law.—*Manufacturer and Builder*.

RABIES AND HYDROPHOBIA.—Two fatal cases of hydrophobia are reported in the *Sheffield Daily Telegraph*, both occasioned by bites from a cat. One case, that of a female domestic servant, aged thirty-two years, occurred in this wise. While engaged in toasting some bread on Christmas day, the cat attacked her, fastening upon the left hand, and the animal was dislodged with difficulty. The day following Christmas day, the same cat attacked a man, wounding him, and he died of hydrophobia on the 22d of January. The young woman first bitten did not manifest symptoms of hydrophobia until the 29th of March, and she died on the 31st.—*London Lancet*.

DR. DAWSON has sold his proprietorship of the *American Journal of Obstetrics* to Wm. Wood & Co., of New York, and is to be succeeded by Dr. Paul F. Munde as editor. Dr. Dawson offers an annual prize of \$150 gold, the first subject being "Congenital Deformities, and Diseases depending on Maladies of the Uterus or Membranes." The competing essays must be sent to the publishers (Wm. Wood & Co., 27 Great Jones Street, New York) of the journal on or before

April 15, 1875. The names of the authors must accompany the manuscripts in sealed envelopes, as usual with prize papers.

SPECIMENS of glycerin in crystals were exhibited at the Vienna Exposition. Such a form of this article had been previously considered impossible. When perfectly pure, however, it is said to crystallize readily, and once in a solid state it does not melt except at a high summer temperature, and the liquid thus formed will not re-crystallize on cooling. The process for its preparation is patented, and a secret. In the form of crystals, glycerin is of use only as a chemical curiosity.—*The Tennessee Pharmacal Gazette*.

ACTION OF HUMAN MILK ON PUPS.—M. Depaul refers to the hurtful action of women's milk on pups. He had a bitch which, having pups and sickened, a nurse applied them to her breast, trying to keep them alive, but they wasted and almost died. He has frequently seen instances of the same happen where pups were applied to the breasts to try and elongate the nipple, an application which is often supposed to be a most efficacious method.

THE DRUG BUSINESS IN GERMANY IS WELL GOVERNED.—There is a central organization with nineteen districts, and each has a director. Each district has five circles with a sub-director. Each circle consists of about fifty members, with a circle-president who watches over the members. No chance for irregularity.—*The Druggist*.

OFFICIAL LIST

OF CHANGES OF STATIONS AND DUTIES OF OFFICERS
OF THE MEDICAL DEPARTMENT U.S. ARMY, FROM
MAY 5 TO MAY 11, 1874, INCLUSIVE.

ABADIE, E. H., SURGEON.—Leave of absence extended sixty days, on Surgeon's Certificate of Disability. S. O. 101, A. G. O., May 8, 1874.

BAILY, E. J., SURGEON.—Relieved from duty in Department of California, and to report in person to the Commanding Officer, Department of the Columbia, for duty as Medical Director of that Department. S. O. 96, A. G. O., May 2, 1874.

COOPER, GEORGE E., SURGEON.—Relieved from duty in Department of the Columbia, and to report in person to the Commanding General, Department of California, for assignment to duty. S. O. 96, c. s., A. G. O.

WRIGHT, J. P., SURGEON.—Relieved from duty in Department of Dakota, to proceed to Carlisle, Pennsylvania, and, on arrival, report by letter to the Surgeon-General. S. O. 96, A. G. O., May 2, 1874.

TOWN, F. L., SURGEON.—Relieved from duty in Military Division of the Atlantic, and to report in person to the Commanding General, Department of Texas, for assignment. S. O. 96, c. s., A. G. O.

WEEDS, J. F., SURGEON.—Assigned to duty at Fort Abraham Lincoln, D. I. S. O. 83, Department of Dakota, April 29, 1874.

TILTON, H. R., ASSISTANT-SURGEON.—Relieved from duty in Military Division of the Atlantic, and to report in person to the Commanding General, Department of Texas, for assignment. S. O. 96, c. s., A. G. O.

BROWN, J. M., ASSISTANT-SURGEON.—Relieved from duty in Department of Texas, to proceed to Philadelphia, Pennsylvania, and, on arrival, report by letter to the Surgeon-General. S. O. 96, c. s., A. G. O.

DE HANNE, J. V., ASSISTANT-SURGEON.—Relieved from duty in Department of the Missouri, to proceed to New York City, and, on arrival, report by letter to the Surgeon-General. S. O. 96, c. s., A. G. O.

WOODRUFF, E., ASSISTANT-SURGEON.—Relieved from duty in Department of Dakota, to proceed to Louisville, Kentucky, and, on arrival, report by letter to the Surgeon-General. S. O. 96, c. s., A. G. O.

DICKSON, J. M., ASSISTANT-SURGEON.—Relieved from duty in Department of the Platte, to proceed to Cincinnati, Ohio, and, on arrival, report by letter to the Surgeon-General. S. O. 96, c. s., A. G. O.